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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/532,775	03/22/2000	Takashi Kano	000352	8757

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EXAMINER

NGUYEN, TUAN M

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/532,775

Applicant(s)

KANO ET AL.

Examiner

Tuan M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2003 and 21 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claim 1, the claim recites current blocking layer includes a multiple structure of at one first layer of a nitride based semiconductor containing at least one of aluminum and boron and at least one second layer of a nitride based semiconductor containing indium and having a smaller band gap than said first layer. Claim does not supported by drawing, refer to figure 1 shows current blocking (12) is formed on first cladding layer (11) and second cladding layer (14) is formed on current blocking layer (12) and on the first cladding layer (11) at striped opening (13). The claim is not clear which render the claim confusing, vague and indefinite.

Regarding to claim 3, the claim recites first nitride based semiconductor layer further includes said second conductivity type cladding layer provided between said active layer and a second conductivity cladding layer in said second nitride based semiconductor layer. The claim does not supported by the drawing, refer to figure 1, shows first nitride based semiconductor (11) separated with second nitride based semiconductor layer by a dot line. The claim is not clear which render the claim confusing, vague and indefinite.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by prior art figure 12.

With respect to claim 1, prior art figure 12 shows a semiconductor laser device comprising a first nitride based semiconductor layer (61) including a first conductivity type cladding layer and an active layer (58) and containing at least one of boron, aluminum, gallium, indium and thallium, a current blocking layer (62) formed on said first nitride based semiconductor layer having a striped opening (63) and a second nitride based semiconductor layer (64) formed on said first nitride based semiconductor layer in said striped opening (62) including a second conductivity type cladding layer and containing at least one of boron, aluminum, gallium, indium, and thallium wherein said current blocking layer (62) including a multiple structure of at least one first layer (61) of a nitride based semiconductor containing at least one of aluminum and boron and at least one second layer of a nitride based semiconductor containing indium and having a small band gap than said first layer.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art figure 12 .

With respect to claims 2 and 10, prior art figure 12 shows at least first layer (61) of nitride based semiconductor and at least one-second layer (64) of a nitride based semiconductor, both are made of AlGa_N. However prior art figure 12 does not specifying the first layer of nitride-based semiconductor has a large aluminum composition ratio than that of the second layer of a nitride-based semiconductor. Since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With respect to claim 3, prior art figure 12 shows first nitride based semiconductor layer (61) further includes said second conductivity type cladding layer (64) provided between said active layer and a second conductivity type cladding layer (64) in said second nitride based semiconductor layer.

With respect to claims 4, 6, 9, 11 and 15-16, the prior art figure 12 shows all limitations as set forth in the claim 1.

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With respect to claim 5, 7-8, 12-14 and 17-20, prior art figure 12 shows current blocking layer (62), second nitride based semiconductor layer (64) and striped opening (63), active layer (58), first conductivity light guide (57), second conductivity light guide (60). However prior art did not compared the refractive index of the current blocking layer and the refractive index of the striped opening. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the refractive index, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

4. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Communication Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247. The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

A handwritten signature in black ink, appearing to read "Paul Ip", with a stylized flourish at the end.

Paul Ip
SPE
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TMN
September 11, 2003